

2013 Maryland FMP Report (July 2014)

Section 8. Bluefish (*Pomatomus saltatrix*)

Chesapeake Bay FMP

Bluefish are a strong fighting fish making them popular with recreational anglers. Commercial harvest of bluefish is less common because the flesh spoils quickly in warm weather, is less firm, and does not freeze well. Bluefish are pelagic and migrate seasonally between Maine and Florida. Estuaries and other nearshore habitats are used as nurseries by bluefish larvae and by juveniles.

The Chesapeake Bay Bluefish Fishery Management Plan (CBFMP) was adopted in 1990 and amended in 2003. The CBFMP Amendment #1 adopted the Mid-Atlantic Fisheries Management Council (MAFMC) and the Atlantic States Marine Fisheries Commission (ASMFC) coastal overfishing definition and rebuilding schedule. Furthermore, CBFMP Amendment #1 introduced ecosystem based management by incorporating water quality improvements, habitat conservation, and multi-species interactions into the management process.

The coastal bluefish stock is jointly managed by the MAFMC and ASMFC. The 1989 coastal FMP was initially developed to address the concerns raised by recreational fishermen about harvest by tuna purse seine fisheries. The bluefish FMP was the first FMP to be developed jointly by an interstate commission and regional fishery management council. The MAFMC/ASMFC FMP was amended by ASMFC in 1998 to prevent recruitment overfishing, reduce fishing waste, improve cooperative management among states, maximize availability, and improve biological understanding. Addendum I to Amendment 1 was approved in February of 2012. The goal for Addendum 1 was to significantly increase the amount of bluefish age and length data collected annually.¹ States having >5% of bluefish harvest, including Virginia, were required to increase sampling; Maryland is not one of those states. MAFMC has amended the FMP four times (2000, 2007, 2011, and 2014). The 2014 amendment limits paybacks due to recreational overages to time periods when bluefish are overfished. Maryland is required to submit an annual compliance report to ASMFC. The compliance report describes the fishery dependent and independent monitoring, current regulations, commercial and recreational landings, and planned management actions.²

Stock Status

Bluefish are managed as a single coastwide stock. The most recent stock assessment update was completed in 2013.^{3,4} This assessment projected stock status through 2014. The bluefish stock was determined to be rebuilt in 2008 and currently is not overfished and overfishing is not occurring.^{3,4} Catch and juvenile recruitment were included in the age-structured assessment program (ASAP) model to estimate fishing mortality (F) and stock biomass.³ Fishing mortality has remained low since 2000. In

2012 it was estimated at 0.097 which is below the target F of 0.19.⁴ Total stock biomass was estimated at 277 million lbs; 85% of the target biomass.⁴

Current Management Measures

Bluefish allocation among fisheries and coastal jurisdictions is based on historic landings data (1981-1989). Annual stock assessments are used to determine total allowable catch (TAC) for commercial and recreational fisheries. Seventeen percent of the TAC is allocated to the commercial fishery and the other 83% of the TAC is allocated to the recreational fishery. The commercial TAC is managed with state-by-state quotas. Maryland receives 3% of the coastwide commercial quota.⁵

The proposed 2014 Atlantic coast TAC is 4.15 million pounds for the commercial fishery and 16.9 million pounds for the recreational fishery.⁶ Maryland's 2014 commercial quota is 218,000 pounds.⁶ The bluefish season is open all year (January 1 – December 31) for both the commercial and recreational fisheries. Maryland's minimum size limit is 8" for the commercial and recreational fisheries. Maryland's recreational fishery has a daily limit of 10 fish/per person/day.

The Fisheries

Maryland's commercial landings in 2012 were 181,000 pounds⁷ and preliminary harvest data for 2013 are 26,500 pounds⁸ (Figure 1). The preliminary Marine Recreational Information Program (MRIP) harvest estimate for 2013 was 56,000 fish in Maryland, down from 114,000 fish in 2012 (Figure 2).⁷ Catch and release has been a common practice in the recreational fishery since the late 1990s (Figure 2).

Issues/Concerns

A single-age key developed from limited data was used in the 2012 stock assessment³ and 2013 update.⁴ States are encouraged to increase collection of age data for a broader size range.⁴ Additional age/length data is needed to address shortcomings in the stock assessment model.

Age-0 bluefish have a bi-modal (spring and summer) recruitment pattern. The contribution of recruits from each season to the adult population is uncertain, although it has been hypothesized that the spring cohort has a greater influence on adult abundance.³ This uncertainty is an additional source of model error.

Discard mortality may be an important factor for bluefish stock assessments. Recreational discard mortality data is limited. It is estimated to be 15%, however, it may be higher and should be reevaluated.³ Commercial discard mortality is uncertain though commercial discards are considered negligible^{3,6}.

References

- ¹ ASMFC. 2011. Addendum I to Amendment 1 to the bluefish fishery management plan. Atlantic States Marine Fisheries Commission. Alexandria, VA.
- ² Durell, E.Q. 2011. Maryland 2010 Bluefish (*Pomatomus saltatrix*) Compliance Report To the Atlantic States Marine Fisheries Commission. Maryland Department of Natural Resources.
- ³ National Marine Fisheries Service. 2012. Bluefish 2012 stock assessment update. US Dept Commerce, Northeast Fishery Science Center.
- ⁴ Rootes-Murdy, K. nd. 2013 review of the Atlantic States Marine Fisheries Commission fishery management plan for the 2012 bluefish fishery: Bluefish (*Pomatomus saltatrix*). Atlantic States Marine Fisheries Commission. Alexandria, VA.
- ⁵ Waite, M. 2011. 2011 Review of the Atlantic States Marine Fisheries Commission fisheries management plan for bluefish (*Pomatomus saltatrix*). Atlantic States Marine Fisheries Commission. Alexandria, VA.
- ⁶ Fisheries of the Northeastern United States; Atlantic Bluefish Fishery; 2014 Atlantic Bluefish Specifications, 79:70 Fed. Reg. 20161-20164 (2014) (proposed rule)
- ⁷ Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division. June 12, 2013.
- ⁸ Personal communication from the NOAA Fisheries Service, Northeast Regional Office, Fisheries Statistics Office:
http://www.nero.noaa.gov/ro/fso/reports/reports_frame.htm.

Figure 1. Commercial bluefish landings in Maryland since 1950.^{7,8} Preliminary landings for 2014.

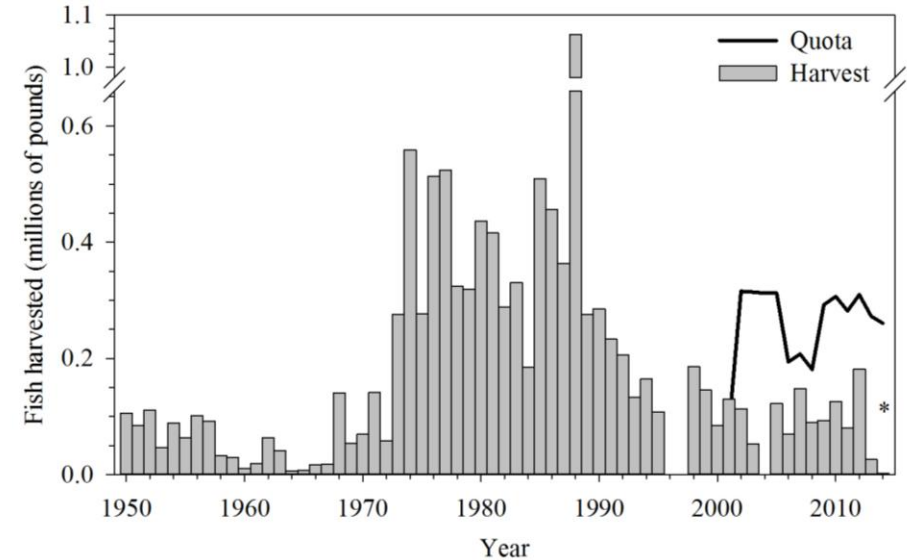
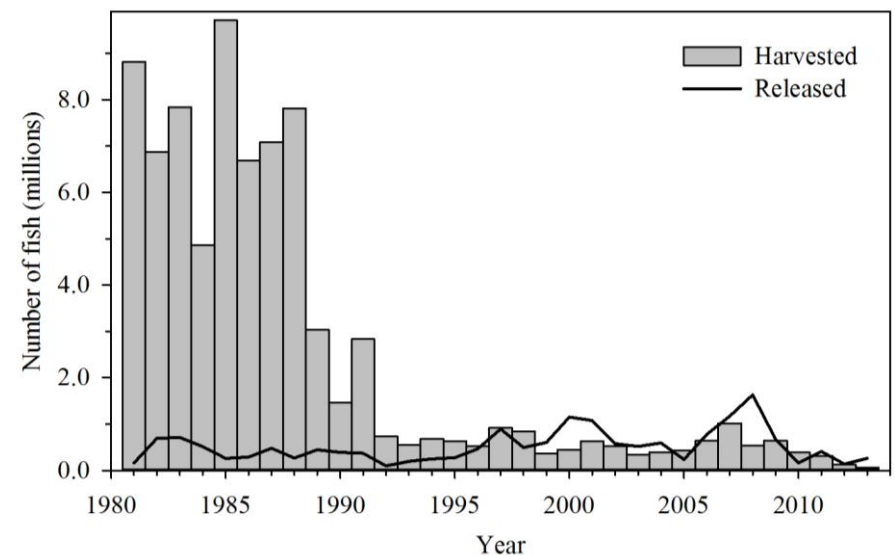


Figure 2. Number of bluefish harvested and released by the recreational fishery in Maryland since 1981.⁷



2003 Amendment #1 to the 1990 Chesapeake Bay Bluefish Fishery Management Plan Implementation Table (updated 7/2014)			
Problem Area	Action	Date	Comments
Stock Status Management Strategy Management measures for the bluefish stock in the Chesapeake Bay will be based on the most recent coastal stock assessment. As stock assessment data, specific to the bluefish resources in the Bay, becomes available, additional measures will be developed. Management actions in Amendment #1 of the 1990 CBP Bluefish FMP will gradually rebuild the bluefish stock in the Chesapeake Bay and its tributaries over a 9-year period by reducing F and increasing SSB.	Action 1.0 CBP jurisdictions will continue to participate in scientific and technical meetings for managing bluefish along the coast and estuarine waters.	1999 Continue	MD and VA staff participate on technical and advisory committees for both MAFMC and ASMFC.
	Action 1.1 CBP jurisdictions will adopt the MAFMC/ASMFC overfishing definition, and adhere to the 9-year rebuilding schedule for the coast wide management of bluefish: F=0.51 (1999-2000) F=0.41 (2001-2003) F=0.31 (2004-2007).	1999 Continue 2008 2013	The 9-year rebuilding schedule reduced F: F=0.51(1999-2000) F=0.41(2001-2003) F=0.31(2004-2007) The bluefish stock is rebuilt, and overfishing is not occurring. Fishing mortality target is $F_{MSY} = 0.19$ and most recent F estimate is 0.097, below the target.
Fishery Management Strategy	Action 2.0 CBP jurisdictions will adhere to the commercial TAL established by the MAFMC/ASMFC. Individual state-by-state TALs are based on historic landings from 1981-1989.	Continue	TAL may vary annually. NMFS proposed revised 2014 commercial TALs of 4.15 million lbs for MD and 864,000 lbs for VA. VA's original 2014 TAL was 1.03 million lbs. TAL includes a research set-aside quota.
	Action 2.1 CBP jurisdictions will continue to require licenses for harvest and sale of bluefish.	1991	Commercial licenses are required by each jurisdiction. VA requires an additional permit for commercial hook and line through a limited entry system. In VA, any species not managed under a coastal quota system is subject to the corresponding recreational creel limit for that species in the commercial hook and line fishery.
	Action 2.2 CBP jurisdictions will adhere to the coastal recreational harvest level established by the MAFMC/ASMFC. Virginia and the Potomac River Fisheries Commission (PRFC) instituted a 10 fish recreational creel limit in 1990. Maryland established a 10 fish recreational creel limit in 1991. Creel limits and minimum size limits may be modified, based on the annual TAL established for the Atlantic coast.	1990 1991 Continue	Historically, recreational landings have accounted for 80-90% of the total catch. MD has a 10 fish creel limit with an 8 inch minimum size limit. VA and PRFC have a 10 fish creel, but no minimum size limit. The proposed coastwide RHL for 2014 is 13.6 million lbs.
Research and Monitoring Strategy CBP jurisdictions will monitor the	Action 3.0 CBP jurisdictions will continue to collect catch	Continue	Mandatory reporting is in effect in all CBP jurisdictions. MAFMC created a RSA program

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commercial and recreational fisheries and improve catch and effort data. CBP jurisdictions will also pursue studies to evaluate the social and economic aspects of the bluefish fishery in the Chesapeake Bay.	and effort data from the commercial fishery, and expand the economic data to include dollar value of the commercial fishery and the annual dockside value received for bluefish in CBP jurisdictions.		which allows up to 3% of the TAC to be sold and the money used to fund research projects. Dockside value is available from NMFS.
	Action 3.1 CBP jurisdictions will assess methods for improving recreational and charter catch/effort data needed to evaluate biological and economic impacts.	Continue 2011 On-going	MD requires logbooks for charter boats. Beginning in 2004, coastal species managed by quota are electronically reported in real time. The MRIP implemented a Chesapeake Bay and Coastal sport fishing license to provide a more comprehensive assessment of recreational fishing statistics than the MRFSS.
	Action 3.2 CBP jurisdictions will continue to collect fishery independent data on bluefish.	2001 On-going	The ChesFIMS and ChesMMAP surveys provided data used to help manage bluefish in Chesapeake Bay. The ChesFIMS survey ended in 2006. Bluefish are regularly sampled by the MDNR summer pound net sampling program.
Habitat Management Strategy CBP jurisdictions will utilize the results from the new independent multifish surveys and research projects within the Chesapeake Bay to identify and develop specific strategies to protect bluefish habitat and important forage species.	Action 4.0 CBP jurisdictions continue to set goals for water quality and habitat restoration and protection, to address commitments established under Chesapeake Bay 2000 Agreement.	2003 2009 2010 2012 2013	Bluefish habitat was identified in Amendment #1 to the Chesapeake Bay Bluefish FMP. President Barack Obama's executive order recommitted federal agencies to Bay restoration and regulatory enforcement. EPA established a Bay wide TMDL (aka: pollution diet). Each jurisdiction must establish 2 year milestones for progress towards meeting its TMDL. Legislation has been passed for restrictions on new developments using septic systems. Legislation for a stormwater fee based on impervious surface coverage was enacted. Chesapeake Bay Program monitors levels of mercury, PCBs, PAHs, organophosphate and organochloride pesticides. Ambient water quality criteria of DO, water clarity, and

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			<p>chlorophyll-a have been adopted for the Chesapeake Bay.</p> <p>See Chesapeake Bay Program website for updates on water quality criteria http://www.chesapeakebay.net/issues/issue/chemical_contaminants http://www.chesapeakebay.net/restoringwaterquality.aspx?menuitem=14728 nutrient reduction</p>
	<p>Action 4.1 CBP jurisdictions will regulate land and water activities that may negatively impact essential water quality parameters for bluefish, such as temperature, dissolved oxygen and turbidity.</p>	Continue	<p>The CBP continues to implement strategies to reduce nutrients and improve water quality in the Bay. Planting forest buffers, controlling stormwater runoff and reducing agricultural and urban non-point nutrient inputs are part of the current action plan.</p> <p>MD developed curriculum “Where Do We Grow from Here?” about population growth and its impacts on the Bay.</p> <p>See Chesapeake Bay Program website for updates on land and water stewardship. http://www.chesapeakebay.net/track/health</p>
	<p>Action 4.2 CBP jurisdictions will monitor activities that could negatively impact submerged aquatic vegetation in areas where bluefish have demonstrated a significant degree of association.</p>	<p>2003 On-going</p> <p>2012</p>	<p>CBP monitors SAV in the Chesapeake Bay by annual aerial survey. The revised SAV goal adopted by Chesapeake Bay Program is planting 1,000 acres of SAV by 2008 and restoration of 185,000 acres of SAV by 2010. Planting goal revised to 20 acres per year. VIMS annually surveys SAV distribution in Chesapeake Bay. A Chesapeake Watershed Agreement was developed (adopted June 2014) with interim targets of 90,000 acres by 2017 and 130,000 acres by 2025. The 2013 SAV acreage was 59,927.</p> <p>MD developed a Blue Infrastructure that includes mapping structural habitat and SAV.</p>

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	Action 4.5 CBP jurisdictions will continue to identify predator/prey interactions, both inter- and intra-species competition and other interactions that might effect the management of bluefish.	On-going	Data from the ChesFIMS and the ChesMAP surveys will be utilized to identify and delineate ecological relationships. Development of multispecies fishery management plans may result from this data.
		2012	A multispecies predator/prey model is being developed by ASMFC that includes bluefish, menhaden, striped bass, and weakfish.

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1.1.2) Maryland, the Potomac River Fisheries Commission, and Virginia will monitor the bluefish fisheries in the Chesapeake Bay and in state coastal waters and implement conservation management measures for the fisheries as needed.	1.1.2.1) Maryland, the Potomac River Fisheries Commission, and Virginia will adhere to state allocations established by the MAFMC and ASMFC if the commercial harvest is projected to equal or exceed 20% of the total bluefish catch from the Atlantic coast. Commercial harvest controls will be coordinated among Bay jurisdictions and will be consistent with those established in federal waters. Options may include gear restrictions, areal closures, trip limits, and quotas.	Dependent on harvest trends	Bay jurisdictions will coordinate with each other and with federal government. May include gear, trip, area, catch, and/or other restrictions. See Amendment #1 Action 2.0
	1.1.2.2) A) Maryland, Potomac River Fisheries Commission, and Virginia will continue current licensing requirements for the commercial harvest and sale of bluefish. B) Virginia will institute a 10 fish creel limit for the commercial harvest of bluefish by hook and line and work towards establishing a commercial hook and line license.	1991	VA will require new regulation for commercial hook and line fishery. A) See Amendment #1 Action 2.1 B) See Amendment #1 Action 2.2
	1.1.2.3) Maryland will establish a 10 fish per person per day recreational creel limit at present minimum for the Chesapeake Bay and state coastal waters. Virginia and the Potomac River Fisheries Commission established a 10 fish per person per day recreational limit in summer 1990. Upon a recommendation from the MAFMC and ASMFC, or as otherwise determined to be appropriate, jurisdictions may modify the possession limit and/or minimum size limit.	1991	Will require new regulations. Jurisdictions will coordinate creel limits and size limits. See Amendment #1 Action 2.2
2 – Wasteful Harvest Practices: There will be a baywide effort to eliminate and/or minimize wasteful harvest practices in the bluefish commercial and recreational fisheries.			
2.1) Efforts will be made to reduce the discard of dead bluefish in the Chesapeake	2.1.1) Virginia and the Potomac River established a 10 fish per person per day	1991	See Action 1.1.2.2

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Bay.	recreational creel limit and Maryland will establish a 10 fish creel limit to minimize wastage (see Action 1.1.2.3).		See Amendment #1 Action 2.2
	2.1.2) Maryland, the Potomac River Fisheries Commission, and Virginia will educate the general public, through the use of information brochures and other means, about the need to reduce the waste problem in the bluefish fishery. Hook and release will be promoted as one method for reducing waste in the fishery.	1991	MD has produced a video & fact sheet on hook & release; ASMFC has also developed hook & release brochure. Will explore other means to educate the public about reducing waste.
	2.1.3) Maryland, the Potomac River Fisheries Commission, and Virginia will begin assessing factors contributing to waste in the commercial bluefish fishery and identifying potential solutions. Issues to be considered include migratory patterns of bluefish, bycatch, the bait fishery, and market demand.	1991	No progress to date.
3 – Research and Monitoring Needs: In order to increase the knowledge and understanding of the bluefish fishery in the Chesapeake Bay, the jurisdictions will monitor the commercial and recreational fishery and improve catch and effort data. The jurisdictions will also pursue studies to evaluate the economic aspects of the bluefish fishery.			
3.1) Maryland, the Potomac River Fisheries Commission, and Virginia will increase the knowledge and understanding of the bluefish fishery in the Chesapeake Bay.	3.1.1) Maryland, the Potomac River Fisheries Commission, and Virginia will improve the catch and effort data collected from the bluefish commercial fishery in the Chesapeake Bay. Recommendations for improving the system include: 1) Coordinate finfish license requirements with the needs of finfish catch and effort reports. 2) Reevaluate the reporting form to include information on what types of gear a fisherman owns, how much they used on a particular day, and how much they caught.	1991	Will be accomplished in conjunction with other fish species reporting. Need to assess licensing, reporting, and follow up systems. VA will pursue mandatory reporting system. See Amendment #1 Action 3.0

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	3) Develop a check and balance system to validate the catch and effort records. 4) Continue the commercial reporting requirements in Maryland and establish a mandatory reporting system in Virginia. 5) Evaluate how the use of young bluefish in the bait fishery contributes to fishing mortality.		
	3.1.2 Maryland, the Potomac River Fisheries Commission, and Virginia will assess methods for improving recreational/charter catch and effort data needed to evaluate the biological and economic impacts of these fisheries. Recommendations include: 1) Evaluate hook and line data collected from the Maryland charter boat industry, i.e., age and length frequency, to characterize the recreational catch in the Bay. 2) Obtain economic information for the recreational and charter fisheries to determine the factors important for sustaining these industries and determining their value to the region. 3) Institute a pilot survey of sportsfishermen. 4) Institute a pilot survey of sportsfishermen in Maryland to obtain catch and effort data for several species, including bluefish.	1991	The ASMFC is encouraging states to buy into MRFSS for bluefish; Bay jurisdictions will assess feasibility. Need staff to look at existing biological data and assess economic factors. See Amendment #1 Action 3.1
	3.1.3) Maryland, the Potomac River Fisheries Commission, and Virginia will encourage research to collect data on bluefish biology, especially estimates of population abundance, mortality, and recruitment in the Chesapeake Bay. Suggested research topics include: 1) Determine the factors that affect bluefish movements and distribution in the Bay. 2) Collect data on length frequency and age composition of both the commercial and recreational bluefish catch. 3) Investigate the environmental parameters that	1991	Will coordinate with CBSAC, universities, other agencies. See Amendment #1 Action 3.2

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	affect reproduction and growth of bluefish.		
4 – Habitat Issues) Adequate water quality is necessary to insure protection of living resources in Chesapeake Bay. The jurisdictions will continue their efforts to improve water quality and define habitat requirements for the living resources in Chesapeake Bay.			
4.1) The District of Columbia, Environmental Protection Agency, Maryland, Pennsylvania, the Potomac River Fisheries Commission, and Virginia will continue to promote the commitments of the 1987 Chesapeake Bay Agreement. The achievement of the Bay commitments will lead to improved water quality and enhanced biological production.	<p>4.1) The District of Columbia, Environmental Protection Agency, Maryland, Pennsylvania, the Potomac River Fisheries Commission, and Virginia will continue to set specific objectives for water quality goals and review management programs established under the 1987 Chesapeake Bay Agreement. The Agreement and documents developed pursuant to the Agreement Call for:</p> <ol style="list-style-type: none"> 1) Developing habitat requirements and water quality goals for various finfish species. 2) Developing and adopting basinwide nutrient reduction strategies. 3) Developing and adopting basinwide plans for the reduction and control of toxic substances. 4) Developing and adopting basinwide management measures for conventional pollutants entering the Bay from point and non-point sources. 5) Quantifying the impacts and identifying the sources of atmospheric inputs on the Bay system. 6) Developing management strategies to protect and restore wetlands and submerged aquatic vegetation. 7) Managing population growth to minimize adverse impacts to the Bay environment. 	Continue	<p>Agencies must coordinate closely; must continue work on habitat requirements for bluefish and other water quality issues in the Bay.</p> <p>Chesapeake Bay Program (CBP) develops, revises, and monitors goals and strategies for agriculture, air pollution, bay grasses, chemical contaminants, climate change, development, education, forests, groundwater, nutrients, population growth, rivers and streams, sediment, stormwater runoff, wastewater, weather, and wetlands. For more information: http://www.chesapeakebay.net/issues http://www.chesapeakebay.net/issues/issue/nutrients http://www.chesapeakebay.net/issues/issue/chemical_contaminants http://www.chesapeakebay.net/issues/issue/sediment http://www.chesapeakebay.net/issues/issue/wastewater http://www.chesapeakebay.net/issues/issue/stormwater_runoff http://www.chesapeakebay.net/issues/issue/air_pollution http://www.chesapeakebay.net/issues/issue/wetlands http://www.chesapeakebay.net/issues/issue/bay_grasses</p>

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			http://www.chesapeakebay.net/issues/issue/dev/development See Amendment #1 Actions 4.0, 4.1, 4.2

Acronyms

ASMFC – Atlantic States Marine Fisheries Commission
 B_{msy} – Biomass maximum sustainable yield
BRP – Biological Reference Point
CBL – Chesapeake Biological Laboratory
CBP – Chesapeake Bay Program
CBSAC – Chesapeake Bay Stock Assessment Committee
CHESFIMS – Chesapeake Bay Fishery Independent Multispecies Survey
CHESMAP – Chesapeake Bay Multispecies Monitoring & Assessment Program
COMAR – Code of Maryland
EPA – Environmental Protection Agency
F – Fishing Mortality
FMP – Fishery Management Plan
 F_{msy} – Fishing mortality maximum sustainable yield (MSY).
MAFMC – Mid-Atlantic Fisheries Management Council
MDNR – Maryland Department of Natural Resources
MRFSS – Marine Recreational Fisheries Statistics Survey
MRIP – Marine Recreational Information Program
NMFS – National Marine Fisheries Service
PFC – Pennsylvania Fish Commission
PRFC – Potomac River Fisheries Commission
RHL – Recreational Harvest Limit
RSA – Research Set-Aside
SAV – Submerged Aquatic Vegetation
TAC – Total Allowable Catch
TAL – Total Allowable Landings
VMRC – Virginia Marine Resources Commission